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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/671,152	09/28/2000	Kazuo Sasama	016887/1012	8463
22428	7590	05/07/2004	EXAMINER	
FOLEY AND LARDNER SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			VILLECCO, JOHN M	
			ART UNIT	PAPER NUMBER
			2612	
			DATE MAILED: 05/07/2004	

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/671,152

Applicant(s)

SASAMA, KAZUO

Examiner

John M. Villecco

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 13-18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities:
  - On page 5, line 30, applicant refers to the lens as reference number 21. This appears to be a typographical error since reference number 12 has been used to designate the lens in every other instance.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 6, 12, 18, and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "weak" in claims 6, 12, 18, and 20 is a relative term which renders the claim indefinite. The term "weak" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The applicant has rendered the electric signal indefinite since one of ordinary skill in the art would not be apprised of what a weak signal would be in this case.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1-12, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. (U.S. Patent No. 5,416,609) in view of Sekizawa et al. (U.S. Patent No. 4,675,727) and further in view of Schachar (U.S. Patent No. 5,774,274).**

6. Regarding *claim 1*, Matsuda discloses an image pickup apparatus for focusing an object image based on the height of the object. The apparatus includes a set of lamps (11) for illuminating the subject, a lens (6) for focusing the image on the linear image sensor (8), and a CPU (31) for controlling the AF motor (7) based on a detected height of the subject. In this case the CPU serves as the control portion and the AF motor serves as the drive portion.

Matsuda, however, fails to explicitly disclose a lens which is long in the main scanning direction used in focusing an object image on the linear sensor or a SELFOC lens for focusing the light on the image sensor. Sekizawa, on the other hand, discloses that it is well known in the art to include a long semi-hemispherical lens and a SELFOC lens when performing imaging using a linear sensor. Sekizawa discloses a long semi-hemispherical lens (102) and a SLA lens (103) for focusing incoming light on the image sensor (105). This is done so as to suppress the generation of false color noise (col. 5, line 67 – col. 6, line 47). It is well known in the art that SLA is another name for a SELFOC lens. Therefore, it would have been obvious to one of

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ordinary skill in the art at the time the invention was made to include a long semi-hemispherical lens and a SLA lens in the linear image sensor of Matsuda so that false color noise is suppressed.

Additionally, neither Matsuda nor Sekizawa specifically disclose that the long semi-hemispherical lens is capable of having its thickness changed based on an electric drive signal from the control portion. Schachar, on the other hand, discloses that it is well known in the art to provide an elastically deformable lens capable of being manipulated to vary the optical power of the lens. More specifically, Schachar discloses in column 8, line 61 to column 9, line 25 that upon an application of an electric voltage a piezoelectric material or solenoid stretches and deforms the lens to vary the optical power. As disclosed in column 4, lines 20-25, the thickness of the lens would be changed when the lens is stretched. Additionally, Schachar discloses in column 4, lines 57-67, that this invention is capable of being implemented in any type of lens. Therefore, it would have been obvious to one of ordinary skill in the art to implement the method of changing the thickness of the lens in Sekizawa in a manner consistent with Schachar so that the lens can be focused variable focused.

7. As for *claim 2*, Schachar discloses using a piezoelectric device to pull the lens into a different shape. Although Schachar only discloses exerting a radial outward force on the lens (i.e. pulling the lens), one of ordinary skill in the art would find it obvious to push the lens in order to deform it. Therefore it would have been obvious to one of ordinary skill in the art to push the lens to deform it as an alternate arrangement.

8. With regard to *claim 3*, Matsuda discloses that the apparatus performs a height detection operation using the image sensor to obtain an autofocus drive signal. The apparatus captures a

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side profile of the book, thereby obtaining an edge and based on the side profile an autofocus drive signal is generated by the CPU (31).

9. Regarding **claim 4**, Matsuda discloses performing autofocus using a drive signal supplied to the AF motor (7). When used in conjunction with Schachar it would have been obvious to replace the motor with the piezoelectric devices of Schachar in order to change the thickness of the lens and perform autofocus.

10. As for **claim 5**, both Matsuda and Sekizawa disclose that the line sensor is a CCD.

11. With regard to **claim 6**, Schachar discloses that the deformable lens is made of a deformable material such as silicone rubber or gel. These two materials are considered soft materials. Furthermore, an electric signal would be applied to the solenoid to drive the lens.

12. As for **claim 7**, Schachar discloses using a piezoelectric device to pull the lens into a different shape. Although Schachar only discloses exerting a radial outward force on the lens (i.e. pulling the lens), one of ordinary skill in the art would find it obvious to push the lens in order to deform it. Therefore it would have been obvious to one of ordinary skill in the art to push the lens to deform it as an alternate arrangement. Additionally, Schachar discloses in Figure 9, a plurality of piezoelectric devices for deforming the lens. Each one is considered to be a block.

13. **Claim 8** is considered substantively equivalent to claim 3. Please see the discussion of claim 3 above.

14. **Claim 9** is considered substantively equivalent to claim 4. Please see the discussion of claim 4 above.

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15. **Claim 10** is considered substantively equivalent to claim 4. Please see the discussion of claim 4 above.

16. **Claim 11** is considered substantively equivalent to claim 5. Please see the discussion of claim 5 above.

17. **Claim 12** is considered substantively equivalent to claim 6. Please see the discussion of claim 6 above.

18. **Claim 19** is considered substantively equivalent to claim 1. Please see the discussion of claim 1 above.

19. **Claim 20** is considered substantively equivalent to claim 6. Please see the discussion of claim 6 above.

***Allowable Subject Matter***

20. Claims 13-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

21. The following is a statement of reasons for the indication of allowable subject matter:

Regarding **claim 13**, the primary reason for indication of allowable subject matter is that the prior art fails to teach or reasonably suggest that the plurality of blocks are capable of individually varying focal distance in accordance with each block.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

or faxed to:

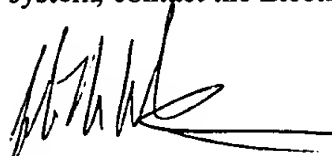
(703) 872-9306 (For either formal or informal communications intended for entry. For informal or draft communications, please label **"PROPOSED"** or **"DRAFT"**)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington VA, Sixth Floor (Receptionist).

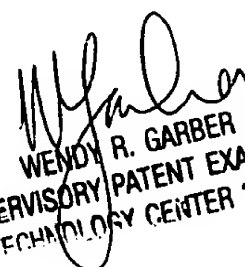
Any inquiry concerning this communication or earlier communications from the examiner should be directed to John M. Villecco whose telephone number is (703) 305-1460. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John M. Villecco  
April 19, 2004



WENDY R. GARBER  
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